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## ABSTRACT

This document contains three papers from a symposium on learning organization practices. "The Beliefs of Managers as Facilitators of Learning in Learning Organizations" (Andrea D. Ellinger) reports selected findings from a qualitative study that examined the perceptions of managers regarding their beliefs, behaviors, triggers, and outcomes when they serve as facilitators of learning for their employees within learning organizations. "The Learning Organization as a Performance Improvement Strategy" (Sandra M. Kaiser, Elwood F. Holton, III) reviews the literature on learning organizations and innovation, identifies strategies for use by organizations seeking improved effectiveness and increased competitive advantage, and presents a set of research propositions hypothesizing the mechanism by which a learning organizations improves performance. "Examining Construct Validity of Dimensions of the Learning Organization Questionnaire" (Baiyin Yang, Karen E. Watkins, Victoria J. Marsick) reports a study that did the following: examined the construct validity of a newly developed instrument, the Dimensions of the Learning Organization Questionnaire, which measures the dimensions of learning organizations; obtained supporting validity evidence for the instrument from several sources, and obtained reliability estimates for the construct's seven proposed dimensions. (MN)

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Learning Organization Practices**Chair: Toni Powell, Barry University****The Beliefs of Managers as Facilitators of Learning in Learning Organizations***Andrea D. Ellinger, Pennsylvania State University-Harrisburg***The Learning Organization as a Performance Improvement Strategy***Sandra M. Kaiser, Louisiana State University**Elwood F. Holton III, Louisiana State University***Examining Construct Validity of Dimensions of the Learning Organization Questionnaire***Baiyin Yang, Auburn University**Karen E. Watkins, University of Georgia**Victoria J. Marsick, Columbia University*

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## The Beliefs of Managers as Facilitators of Learning in Learning Organizations

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*This paper reports some of the findings from a qualitative study which was undertaken to examine the perceptions of managers regarding their beliefs, behaviors, triggers, and outcomes when they serve as facilitators of learning for their employees within learning organizations. Specifically, the findings associated with managers' beliefs will be presented.*

Organizations are increasingly being challenged to leverage learning as it has been widely articulated that knowledge creation and continuous learning at the individual, team, and organizational level may be the only source of sustainable competitive advantage (Day, 1994; deGues, 1988, 1997; Nonaka, 1991; Senge, 1993; Slater & Narver, 1994, 1995; Watkins & Marsick, 1993, 1996a, 1996b). Given this increased emphasis on learning, there has been a tremendous interest in the concept of learning organizations, and the capabilities required to build learning organizations. Despite the growing literature that is emerging on the learning organization which offers suggestions about management practices that facilitate organizational learning, Ulrich, Von Glinow and Jick (1993) contend that "to date, there have been far more 'thought papers' on why learning matters than empirical research on how managers can build learning capability" (p. 59). Therefore, research is needed which specifically investigates the processes and behaviors associated with facilitative management.

The concept of facilitative leadership within learning organizations is also a radical departure from the command and control style of leadership and management that has typically prevailed in traditional organizations. This new style of leadership and management must shift from a command and control orientation to a facilitate and empower orientation in which leaders and managers focus on the development of their people and on facilitating their learning. While the notion of learning within learning organizations has received considerable attention, the teaching component has largely been ignored (French & Bazalgette, 1996).

Although numerous scholars have suggested that leaders and managers will play an important role in building learning organizations (Senge, 1990a, 1990b; Slater, 1995; Slater & Narver, 1994, 1995; Watkins & Marsick, 1993, 1996a, 1996b), their conceptions and descriptions of these roles differ. It has been acknowledged that leaders and managers will assume roles as teachers (Senge, 1990a, 1990b; Wisdom & Denton, 1991), coaches (Conger, 1993; Evered & Selman, 1989; Frohman, 1978; Marsh, 1992; Rosow & Zager, 1990), educators (Antonioni, 1994), and facilitators (Weaver & Farrell, 1997). Kanter (1989), however, asserts that "theorists have given scant attention to the dramatically altered realities of managerial work in these transformed corporations" (p. 85), and little empirical research has examined this apparent redefinition of managerial roles. Additionally, studies on managerial behavior often do not capture the rationale that managers use in engaging in their work. Fisher (1989) has suggested that it may be helpful to separate the various aspects of the management role into two categories. These categories represent those aspects which are observable, such as behaviors, and those that are not observable. The unobservable elements represent the core beliefs of the manager "which provide the essential clues through which the consistency of even seemingly inconsistent behaviors can be understood" (p. 36).

The current study was undertaken to address the research challenges outlined by Slater and Narver (1994) and Ulrich, Von Glinow and Jick (1993) with respect to empirically investigating the facilitative managerial actions associated with building learning organizations. The purpose of this qualitative study was to examine the perceptions of managers regarding their beliefs, behaviors, triggers, and outcomes when they serve as facilitators of learning for their employees within learning organizations. This research was guided by four questions:

- (1). What are the managers' beliefs about their role as facilitators of learning?
- (2). What triggers the managers to engage in a learning episode?

- (3). What are the role dimensions and related behaviors that contribute to the role of managers as facilitators of learning?
- (4). What are the consequences for managers and learners associated with the learning episode?

This paper, however, specifically reports the findings associated with question one regarding managers' beliefs about their role as facilitators of learning.

### Conceptual Framework

An adaptation of the Campbell, Dunnette, Lawler, and Weick model (1970) and Clawson's (1992) Person-Role Model formed the conceptual model which served as the framework for the study. The Campbell et al. model, the person-process-product model (Morse & Wagner, 1978), is a heuristic model which is a schematic portrayal of factors determining the expression of managerial behaviors. The person in this model refers to the manager's individual characteristics and abilities, the product refers to the outcomes and the process refers to the manager's on-the-job behaviors and activities. Their model makes it apparent that the manager's behavior is directed by many different factors and by the interactions between them. Clawson's model differs slightly with the addition of multiple behaviors which form role dimensions.

In this adapted model, the manager's individual attributes, belief system and developmental experiences are thought to influence the manager's adoption of the role of facilitator of learning. In serving as a facilitator of learning, it was thought that managers engaged in learning episodes with employees that are initiated by triggers, or catalysts for learning. The manager's behaviors during the learning episode were identified and collapsed into dimensions which help to define the role of facilitator of learning. It was anticipated that consequences would be associated with the learning episodes for learners, the manager and possibly the organization. This model was furnished as a point of reference, a boundary for the study, but was not empirically tested. Question one is the focus of this paper.

### Research Design and Methodology

The design of the research study was a descriptive qualitative approach using the Critical Incident Technique (Flanagan, 1954) and semi-structured interviews as the primary methods of data collection.

*In Action: Creating the Learning Organization* (Watkins & Marsick, 1996b), a casebook published in 1996 by the American Society for Training and Development served as the population from which a purposeful sample of five organizations was drawn. Four organizations actually participated in the study, and through an expert nomination process, twelve managers were recommended to the researcher as being exemplary facilitators of learning within their respective organizations. The twelve managers agreed to participate in the study, and in-depth personal interviews were conducted with each manager. At a minimum, these interviews averaged at least two hours in length. The managers were asked to describe at least four effective and/or ineffective critical incidents when they thought they served as facilitators of learning for their employees, which led to a total of fifty-six critical incidents. The interviews were tape recorded and transcribed verbatim by the researcher.

Content analysis was employed to analyze the data. The unit of analysis was the critical incident. The major components of the conceptual model guiding this study, Beliefs, Triggers, Behaviors, and Outcomes became the organizing framework to begin sorting the data. Through a process of content analysis and open coding, the researcher thematically analyzed the critical incident data. A total of eight hundred sixty-six data strips were derived from the data set meeting the definitional requirements of the four framework categories. Approaches to data analysis recommended by Guba and Lincoln (1981) and Weber (1990) were rigorously adhered to throughout the data analysis process. In addition to peer and colleague examination, an external reviewer with fifteen years of managerial experience also participated in the coding process. The use of this reviewer helped to establish reliability of emergent themes to achieve semantic validity.

Completion of the coding process resulted in the thematic classification of critical incident data to address the research questions guiding the study.

## Findings

Although several themes emerged from the data set, the findings that follow specifically focus on Beliefs. The framework category of Beliefs was defined as a set of closely held personal assumptions and world views of the manager which guide his or her reasoning and action. A total of 311 beliefs were reported by the managers which formed six clusters of beliefs, and several themes emerged within each cluster. Table 1 depicts these six clusters.

Table 1. Clusters of Managers' Beliefs

| Manager Belief System:                 |                                    |
|----------------------------------------|------------------------------------|
| Beliefs About Roles                    | Beliefs About Learners             |
| Beliefs About My Personal Capabilities | Beliefs About the Learning Process |
| Beliefs About General Capabilities     | Beliefs About Learning             |

Although several themes emerged within each cluster, one of the most significant clusters of beliefs related to managers' beliefs about their roles as depicted in Table 2 and will be the central focus of this paper.

Table 2. Beliefs About Roles

| Beliefs About Roles                                                    |
|------------------------------------------------------------------------|
| My Role is to Facilitate Learning and Development -- This is What I Do |
| The Difference Between Coaching and Management -- Role Distinction     |
| Management is Telling People What to Do                                |
| Coaching is All About People -- Helping Them Grow and Develop          |

**Beliefs About Roles.** Managers reported four related, but distinct views about their roles. The most dominant theme was their perception about their current role as being facilitators of learning. All 12 managers expressed their role and related responsibilities to be helping their employees grow and develop. One manager expressed his perception of his role as a metaphor. He said, "I try to keep things running smoothly. Basically, we have this really high powered technical engine, a maserati, and when you see that maserati running and racing and really impressive, you don't see me driving it, you don't see me as the car or the engine. I'm the mechanic that comes in at night that does the tune ups so that the next day it's running smooth. That's what I do" [M1, p. 17]. Similarly, M10 said, "My job is teaching this to other people. My job is making sure that everybody understands that this stuff ties to this stuff, and this stuff ties to the business, and if all of this doesn't work right, then we don't get the results that we need....and if people aren't able to do this, you have to teach them how to do this" [M10, p. 28].

Three additional related but distinct themes within this cluster about roles related to managers' perceptions about role distinction, and specifically their beliefs about management and coaching, which most managers used synonymously with facilitating learning. To illustrate the theme of role distinction, one manager, M7, acknowledged the distinction between manager and coach as, "I think the thing is, that the word coach brings a different sense to that word. OK, when somebody says you're the manager, it's like you're in charge of it, OK, whereas if you are a coach, you are there more to help people succeed" [p. 29]. They further articulated this distinction by sharing their views about what management means to them, and what coaching means to them, which represent the two other themes within this beliefs cluster. Managing for these managers was perceived to be telling, judging and controlling, and coaching was perceived

to be a way of empowering learners, helping learners to understand, and removing obstacles that inhibited their abilities to excel. These two excerpts illustrate these themes respectively. Manager, M9, acknowledged, "the word manager to me, the picture that comes to my mind is, manager is when you tell somebody to go from A to Z and you tell them exactly how to get there" [p. 25], and in contrast, another manager, M6, said, "a coach is just the opposite of that {manager}. The coach is one {who} empowers {team members}, gives them responsibility and expects them to make decisions, expects them to grow and develop and get better at what they do, and have more of an impact. We're hiring your mind, not your body. I don't care if you have {certain physical talents}, it's up here {pointing to head} that is really gonna make us better than what we are today. It's more interaction, it's more give, take. It's more using each others' skills and leveraging each others' skills" [p. 23].

These findings about roles are significant because they contradict some of the existing management literature. Although Honey (1995) has acknowledged that developing people has long been held to be one of the most important responsibilities of any manager, he suggests that few managers regard themselves as developers because they view it as a distraction from their "proper" work, they are unsure how to go about it, or because they think that the training and HRD department are responsible. In contrast, based upon the findings from this study, the collective belief among all of the managers in this study was that facilitating learning was their current role. This belief was manifested in the enactment of thirteen sets of behaviors that formed the role dimensions associated with facilitating learning in this study. This finding is also significant because earlier studies in management have suggested that behaviors associated with personnel and human resource management and development have tended to be prevalent when managers representing these functional areas have comprised the samples. Important to note is that the twelve managers participating in this study were mid and senior level managers representing various functional specializations, including manufacturing, finance and accounting, management information systems, customer service and facilities management. This also suggests that the nature of the behaviors that these managers enacted were not influenced by functional or hierarchical level which also contradicts some earlier research studies. Lastly, this study has depicted that being a facilitator of learning, or coach, and a manager are considered to be two different and distinct roles by managers in this study. Management research has often characterized the role of manager as being comprised of many specific behaviors, such as coaching, training, and mentoring (Yukl, 1981, 1989a, 1989b, 1994; Yukl & Van Fleet, n.d.). This study suggests that being a facilitator of learning is a role, and has delineated the specific behaviors which accompany this role.

Figure 1 depicts the cluster of beliefs about roles on a continuum representing a transition to becoming a learning organization. Managers in this study viewed the concept of being a manager and the concept of being a facilitator of learning, or a coach, as being dichotomous roles. However, many of these managers recognized that there were certain circumstances in which they had to flex between these roles, or perform a role switching function. This progression from recognizing that there are role distinctions between being a manager and being a coach appears to be an initial step in the movement of managers' mental models toward the concept of the learning organization. The next movement along this continuum appears to be role transition in which the managers experience role switching, but become increasingly more comfortable in coaching roles. At this point, managers express their preferences at being in a coaching role as opposed to a manager role. The final movement along this continuum appears to be role adoption in which the manager identifies with the role of coach. One manager shared an incident which captures the essence of this continuum. Manager, M3, related a situation in which a team did not take the initiative on a project. When he met with the team, he said, "Basically {I} had to say as a manager, by this date I would like to see a plan and what are we going to do" [p. 10]. When he later got feedback that the team felt badly and somewhat beaten up, M3 consciously stepped out of the role of manager and into the role of facilitator of learning. He and his team had additional meetings, "where it was definitely more teaching than judging and managing ....because I toned it down, and I focused more on the teaching rather than the judging" [p. 11].



the trust factor, which they also perceived to be an important capability. The establishment of open, trusting relationships has also been cited in the coaching literature. The importance of knowing your employees well enough to help them has also been a theme which has emerged in Schelling's (1991) research on successful sales managers.

**Beliefs About Learners.** This cluster included five themes. These themes related to managers' beliefs that their employees were extremely capable of learning, making decisions and exceeding expectations. Research conducted by Schneider, Klemp and Kastendiek (in Watkins, 1983) about the skills, values and attitudes that underlie effective teaching reported findings related to this theme. The overall expression of positive expectations was a powerful theme that emerged in their findings regarding effective teachers. The single most dominant theme with average faculty members was the expression of negative expectations. This high level of regard for students' as learners in this study seems to parallel the findings in the current study about the managers' high level regard for their employees as learners. There was one conflicting theme in which two managers indicated their overall uncertainty about the capabilities of their employees, however, the researcher suspects that mitigating circumstances affected their perceptions. In each case, the managers had inherited perceived problem employees and had only been exposed to the negative comments that had been made about each of their respective situations. In each case, both managers were successful in rehabilitating these problem employees into top performers. The next theme relating to employees' willingness to learn is supported as a component of coaching in Seifert's (1994) review of the coaching literature. Evered and Selman (1989) acknowledge that one of the basic principles of effective coaching is "that no one can be coached in the absence of a demand for it" (p. 21). The two remaining themes in this cluster of beliefs relate to managers' overall perceptions that learners need a solid foundation of information, both in formal education, and on-the-job knowledge, and need to understand the 'why's of their work.

**Beliefs About the Learning Process.** This cluster included managers' beliefs about the importance of feedback to coaching and facilitating learning, that learning should be integrated within the context of the work environment, and that learners had to assume some of the responsibility for their own learning and be held accountable. Feedback as a component of effective coaching has been widely reported in the coaching literature. The integration of learning with work is incorporated into many definitions that scholars have used to describe learning organizations, and represents a way of building continuous learning opportunities by integrating informal learning and formal learning. Generally, most learning that occurs in the workplace is informal and incidental learning.

**Beliefs About Learning.** This final cluster underscored managers' beliefs about the importance of learning, the continuous, iterative and on-going nature of learning, and the notion that learning is shared. As one manager, M10, stated, "...to me, the single biggest thing you could do to improve management is to teach managers how to teach people, which no one teaches in management school or in any business anywhere. No one teaches you how to teach people" [p. 6].

### How This Research Contributes to New Knowledge in HRD

This study is particularly relevant to the management, adult education and human resource development fields for a number of reasons. As managerial roles are redefined to include teaching, coaching, education and development in organizations seeking to become more learning-oriented, trainers and human resource development practitioners traditionally responsible for such training, coaching and development functions will no longer be considered the sole providers of these services, but part of a much broader educational system within the organization. As a result, it is possible that an increasing number of the adult educators in the workplace will be managers and leaders. Although there is a growing body of literature on coaching, it tends to be atheoretical (Popper & Lipshitz, 1992), and only a few empirical studies have been conducted which examine what good coaches do, and the relationship between preferred models of coaching and improved performance (Marsh, 1992). Additionally, most literature on managerial behaviors has not captured or integrated managers' reasoning into the behavioral equation (Gibbs, 1994; Marshall & Stewart, 1981; Stewart, 1989). Stewart (1989) has indicated that studying how

individual managers think about their work and their jobs is "the most open-ended, and potentially the most difficult and the most exciting of the possibilities outlined so far" (p. 8).

The current research empirically examined the beliefs of managers, not traditionally charged with training and human resource development tasks, which guided their actions in facilitating learning of their employees in learning organizations. The models that managers have about their jobs have widespread implications for management researchers, management teachers, and management development (Marshall & Stewart, 1981), and this study provides a foundation upon which other researchers can build. Specifically, these findings may provide managers, trainers, and human resource development professionals with an understanding of the mental models of exemplary facilitators of learning that guide their reasoning and action, so that interventions can be developed to assist in this role transition process.

## References

- Antonioni, D. (1994). Managerial roles for effective team leadership. Supervisory Management, 39(5), 3.
- Campbell, J. P., Dunnette, M. D., Lawler, E. E., III, & Weick, K. E., Jr. (1970). Managerial behavior, performance, and effectiveness. New York, NY: McGraw-Hill Book Company.
- Clawson, V. (1992). The role of the facilitator in computer supported environments. Unpublished doctoral dissertation, Walden University.
- Conger, J. A. (1993). Training leaders for the twenty-first century. Human Resource Development Quarterly, 3(3), 203-218.
- Day, G. S. (1994). The capabilities of market-driven organizations. Journal of Marketing, 58(4), 37-52.
- de Geus, A. P. (1988). Planning as learning. Harvard Business Review, (March-April), 70-74.
- de Geus, A. P. (1997). The living company. Harvard Business Review, 75(2), 51-59.
- Evered, R. D., & Selman, J. C. (1989). Coaching and the art of management. Organizational Dynamics, 18(Autumn), 16-32.
- Flanagan, J. C. (1954). The critical incident technique. Psychological Bulletin, 51(4), 327-358.
- French, R., & Bazalgette, J. (1996). From 'learning organization' to 'teaching-learning organization'? Management Learning, 27(1), 113-128.
- Frohman, A. L. (1978). The performance of innovation: Managerial roles. California Management Review, 20(3), 5-12.
- Gibbs, B. (1994). The effects of environment and technology on managerial roles. Journal of Management, 20(3), 581-604.
- Graham, S., Wedman, J. F., & Garvin-Kester, B. (1993). Manager coaching skills: Development and application. Performance Improvement Quarterly, 6(1), 2-13.
- Graham, S., Wedman, J. F., & Garvin-Kester, B. (1994). Manager coaching skills: What makes a good coach? Performance Improvement Quarterly, 7(2), 81-94.
- Guba, E. G., & Lincoln, Y. S. (1981). Effective evaluation. San Francisco: Jossey-Bass.
- Honey, P. (1995). Everyday experiences are opportunities for learning. People Management, 1(18), 55.
- Kanter, R. M. (1989). The new managerial work. Harvard Business Review, (November-December), 85-92.
- Marsh, L. (1992). Good manager: Good coach? What is needed for effective coaching? Industrial & Commercial Training, 42(9), 3-8.
- Marshall, J., & Stewart, R. (1981). Managers' job perceptions: Part I: Their overall frameworks and working strategies. Journal of Management Studies, 18(2), 177-189.
- Marshall, J., & Stewart, R. (1981). Managers' job perceptions: Part II: Opportunities for, and attitudes to, choice. Journal of Management Studies, 18(3), 263-275.
- Morse, J. J., & Wagner, F. R. (1978). Measuring the process of managerial effectiveness. Academy of Management Journal, 21(1), 23-35.

- Nonaka, I. (1991, November/December). The knowledge-creating company. Harvard Business Review, 96-104.
- Orth, C. D., Wilkinson, H. E., & Benfari, R. C. (1987). The manager's role as coach and mentor. Organizational Dynamics, 56-74.
- Popper, M., & Lipshitz, R. (1992). Coaching on leadership. Leadership & Organization Development Journal, 13(7), 15-18.
- Rosow, J. M., Zager, R. (1989). New roles for managers: Part III: The manager as trainer, coach and leader. A Work in America Institute National Policy Study, Work in America Institute, Scarsdale, New York, 1-35.
- Schelling, C. (1991). Measuring the impact of training. Cincinnati, OH: AT & T Research Report.
- Schneider, C., Klemp, G. O., Jr., & Kastendiek, S. (1983). The balancing act: Competencies of effective teachers and mentors. In K. Watkins (Ed.), Innovation Abstracts, Vol. 5, No. 4, Austin, TX: National Institute for Staff and Organizational Development.
- Seifert, L. L. (1994). Perceptions of managerial coaching within selected workplaces. Unpublished doctoral dissertation, University of Arkansas.
- Senge, P. M. (1990a). The fifth discipline. New York, NY: Doubleday.
- Senge, P. M. (1990b). The leader's new work: Building learning organizations. Sloan Management Review, 32(1), 7-23.
- Senge, P. M. (1993). Transforming the practice of management. Human Resource Development Quarterly, 4(1), 5-32.
- Slater, S. F., & Narver, J. C. (1994). Market oriented isn't enough: Build a learning organization. Marketing Science Institute (Report Number 94-103), 1-30.
- Slater, S. F., & Narver, J. C. (1995). Market orientation and the learning organization. Journal of Marketing, 59(July), 63-74.
- Stewart, R. (1989). Studies of managerial jobs and behaviour: The ways forward. Journal of Management Studies, (1), 1-10.
- Ulrich, D., Von Glinow, M. A., & Jick, T. (1993). High-impact learning: Building and diffusing learning capability. Organizational Dynamics (Autumn), 52-66.
- Watkins, K. E., & Marsick, V. J. (1993). Sculpting the learning organization: Lessons in the art and science of systemic change. San Francisco, CA: Jossey-Bass.
- Watkins, K. E., & Marsick, V. J. (1996a). Adult educators and the challenge of the learning organization. Adult Learning, 7(4), 18-20.
- Watkins, K. E., & Marsick, V. J. (Eds.) (1996b). In action: Creating the learning organization. Virginia: American Society for Training and Development.
- Weaver, R. G., & Farrell, J. D. (1997). Managers as facilitators. San Francisco, CA: Berrett-Koehler Publishers, Inc.
- Weber, R. P. (1990). Basic content analysis (2nd ed.). Newbury Park, CA: Sage Publications, Inc.
- Wisdom, B. L., & Denton, D. K. (1991). Manager as teacher. Training and Development, 45(12), 54-58.
- Yukl, G. A. (1981). Leadership in organizations. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Yukl, G. A. (1989a). Leadership in organizations (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Yukl, G. (1989b). Managerial leadership: A review of theory and research. Journal of Management, 15(2), 251-289.
- Yukl, G. (1994). Leadership in organizations (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.
- Yukl, G., & Van Fleet, D. D. (n.d.). Theory and research on leadership in organizations, in (unknown).

## The Learning Organization as a Performance Improvement Strategy

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*The learning organization has received increased attention in the literature as a strategy to increase learning at the individual, team, and organization levels. In a similar manner, the innovation literature has seen renewed and continued interest and growth. A review of both literatures suggests that similar strategies are discussed and recommended for use by organizations seeking improved effectiveness and increased competitive advantage. This paper examines the parallels and concludes with a set of research propositions hypothesizing the mechanism by which the learning organization improves performance.*

The learning organization has been a focus of attention in the organizational literature in recent years. Interest in this organizational development (OD) intervention has been spurred by the constantly changing work and business environments, which has been prompted by technological advances, increased levels of competition, and globalization of industries. Senge and other researchers have described the characteristics of the learning organization and made suggestions for organizational implementation (Kline & Saunders, 1993; Marquardt, 1996; Pedler et al., 1991; Senge, 1990; Watkins & Marsick, 1993). Books have been written outlining successful implementation and turn-around stories in leading organizations such as Honda, Federal Express, Xerox, and Corning (Garvin, 1993; Marquardt, 1995). The claim has been made that, by adopting some or all of the prescribed features of the learning organization, an organization's performance should be improved (Kline & Saunders, 1993; Kuchinke, 1995; Senge, 1992; Slater & Narver, 1995).

Much of the learning organization literature is conceptual and descriptive. While there are numerous descriptive accounts and suggestions about why the process works, there are few concrete descriptions about how it works to achieve performance improvement. Definitions of the learning organization speak in terms of achievement, and Kline and Saunders (1993) clearly state that "what's at stake is continuous improvement" to achieve greater effectiveness (p.33). Learning organizations perceive learning as the means to long-term performance improvement (Guns, 1996). However, there is little data supporting the claim that performance improvement is directly related to adoption of the learning organization's suggested behaviors or policies. Research is sorely needed to fill this void. Sound research and data supporting the claims of performance improvement directly related to the learning organization implementation would provide a level of validity which currently is not strongly apparent (Jacobs, 1995).

One reason that research is missing may be the lack of a specific researchable theoretical framework with which to design empirical studies. A review of the learning organization literature suggests that many of the characteristics and recommended organizational procedures are similar to those found in the innovation literature (Damanpour, 1991; Kuchinke, 1995; Nonaka & Takeuchi, 1995; Strata, 1989; Tjosvold & McNeely, 1988). Both literatures make claims to organizational performance improvement. It is proposed that innovation may be the link which enables the learning organization to impact organizational performance.

The purpose of this paper is to propose the process through which the learning organization brings about organization performance improvement. The goal of proposing this model and propositions is to spur research into the organizational learning-performance relationship. More specifically, this paper will:

- 1.) Explore the parallels between the learning organization and innovation research, and
- 2.) Propose a model and a series of researchable propositions about the relationship between the learning organization, innovation, and performance improvement.

## Learning Organization

The dimensions which are commonly described in the literature as being associated with a learning organization are not new concepts but their coordination into a system focused on organizational learning is. However, there is no single definition of what the learning organization is. Senge defines a learning organization as "a place where people are continually discovering how they create their reality (Senge, 1990, p.13). Watkins and Marsick (1993) describe a learning organization in terms of people learning and working together to achieve their goals. A comprehensive definition of a learning organization is offered by Marquardt (1996, p.19): "... an organization which learns powerfully and collectively and is continually transforming itself to better collect, manage, and use knowledge for corporate success."

There appears to be some common recognition and agreement about the core characteristics of a learning organization. Researchers suggest that: individuals and teams work toward the attainment of linked and shared goals, communication is open, information is available and shared, systems thinking is the norm, leaders are champions of learning, management practices support learning, learning is encouraged and rewarded, and new ideas are welcome (Marquardt, 1996; Senge, 1990; Watkins & Marsick, 1993;). The learning outcomes found in a learning organization are expected to include experiential learning, team learning, second-loop learning, and shared meaning (Argyris, 1977; Argyris & Schon, 1978; Dodgson, 1993; Senge, 1990). As a result of this learning, organizations are believed to be capable of new ways of thinking. However, learning is viewed as a means to an end by Kuchinke (1995), who says that an "orientation toward performance improvement gives the learning organization focus and legitimacy" (p. 309). Organizational learning, to be of value, must be managed for performance at the individual, group, and organizational levels (Kuchinke, 1995).

Holton (in press) provides a useful taxonomy of "performance" and "performance drivers" that accommodates the gap between those focused first on the organization and then learning, versus those focused first on the learning and then the organization. Performance is the actual outcomes produced by the organization (e.g. goods and services). Drivers are elements of performance that are expected to sustain or increase system, sub-system, process, or individual ability and capacity to be more effective or efficient in the future. Thus, they are leading indicators of future outcomes and tend to be unique for particular business units. Together with outcome measures, they describe the hypothesized cause and effect relationships in the organization's strategy (Kaplan & Norton, 1996). HRD professionals must pay attention to both performance and performance drivers. Organization performance, such as high quality services delivered to external customers, can be logically connected to performance drivers, such as learning and innovation.

Using this conceptualization, the learning organization would be classified as a strategy focusing on performance drivers. More specifically, it enhances learning, which in turn is believed to enhance performance. The problem is that the gap between learning and performance is large, and the relationship is difficult to prove.

## Innovation

Just as the learning organization has been described as an organizational response to the dramatically changing work environment, so has innovation been described as finding its genesis in "shocks that may be either internal or external to an organization (Van de Ven & Rogers, 1988, p.644). Innovation is conceived as an organizational response to environmental change by Damanpour and Evan (1984) and by Brown and Duguid (1991). Put simply, innovation is a new idea (Galbraith, 1982; Van de Ven, 1986) which may be created by or adopted by the organization. The expected result is improvement in the achievement of goals and organizational performance (Damanpour, 1991; Damanpour & Evan, 1984).

Innovation involves the generation, development, and implementation of ideas or behaviors (Damanpour, 1991) and is defined as:

*"...the adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization"*  
(p.556).

The key to innovation is the creative process which is grounded in learning and knowledge creation.

**Table 1-Characteristics of Learning and Innovating Organizations**

| Learning Organization                                                                                                                  | Innovating Organization                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Environment/Customers                                                                                                                  | External Environment Meyers & Goes, 1988                                                                                       |
| Leadership                                                                                                                             | Leadership Meyers & Goes, 1988<br>Galbraith, 1982                                                                              |
| Alliances                                                                                                                              | Advocacy Meyers & Goes, 1988                                                                                                   |
| Champion                                                                                                                               | Champion Daft & Becker, 1978<br>Leonard-Barton, 1988                                                                           |
| Structure: Boundaryless                                                                                                                | Structural Complexity Rogers, 1983<br>Damanpour, 1991<br>Leonard-Barton, 1988<br>Galbraith, 1982                               |
| Customers, Suppliers, Vendors                                                                                                          | Market Strategy Meyer, 1982                                                                                                    |
| Resource Commitment                                                                                                                    | Resource Allocation Meyers & Goes, 1988<br>Damanpour, 1991<br>Amabile, 1988                                                    |
|                                                                                                                                        | Attitudes Toward Ettlie & O'Keefe, 1982<br>Damanpour, 1991                                                                     |
| Communication Sharing                                                                                                                  | Communication Tjosvold & McNeely, 1988<br>Brown & Duguid, 1991<br>Damanpour, 1991<br>Galbraith, 1982<br>Fidler & Johnson, 1984 |
| Vision/Goals/Systems                                                                                                                   | Cooperative Goals Tjosvold & McNeely, 1988                                                                                     |
| Double-loop learning/<br>Mental Models                                                                                                 | New Interpretations of Information Brown<br>& Duguid, 1991                                                                     |
| Communities of Practice                                                                                                                | Communities of Practice Brown & Duguid, 1991                                                                                   |
| Culture                                                                                                                                | Culture, Norms, Values Glynn, 1996                                                                                             |
| Learning: Indiv., Team, & Organizational                                                                                               | Learning Capabilities Glynn, 1996                                                                                              |
| Experiential Learning                                                                                                                  | Problem novelty/challenge Glynn, 1996<br>Amabile, 1988                                                                         |
| Learning Systems                                                                                                                       | Technology Glynn, 1996                                                                                                         |
| Trust and Autonomy                                                                                                                     | Operational Autonomy Amabile, 1988                                                                                             |
| Empowerment                                                                                                                            |                                                                                                                                |
| Management Practices                                                                                                                   | Management Practices Amabile, 1988                                                                                             |
| Incentives/Encouragement                                                                                                               | Encouragement Amabile, 1988                                                                                                    |
| Learning Climate                                                                                                                       | Climate Amabile, 1988                                                                                                          |
| Recognition/Reward                                                                                                                     | Recognition /Reward Amabile, 1988<br>Galbraith, 1982                                                                           |
| Table developed using Argyris & Schon (1978); Ashkenas, et al. (1995); Marquardt, (1996); Senge (1994, 1990); Watkins & Marsick (1993) |                                                                                                                                |

Nonaka and Takeuchi (1995) suggest that during the knowledge creation process, information is taken into the organization and shared, stored, and used by the organization in developing new technologies and products. They suggest that a "conversion of some sort takes place" (p.6). They describe the process as one of knowledge creation, continuous innovation, and competitive advantage leading to organizational success. This conversion may be the same process described in the learning organization literature.

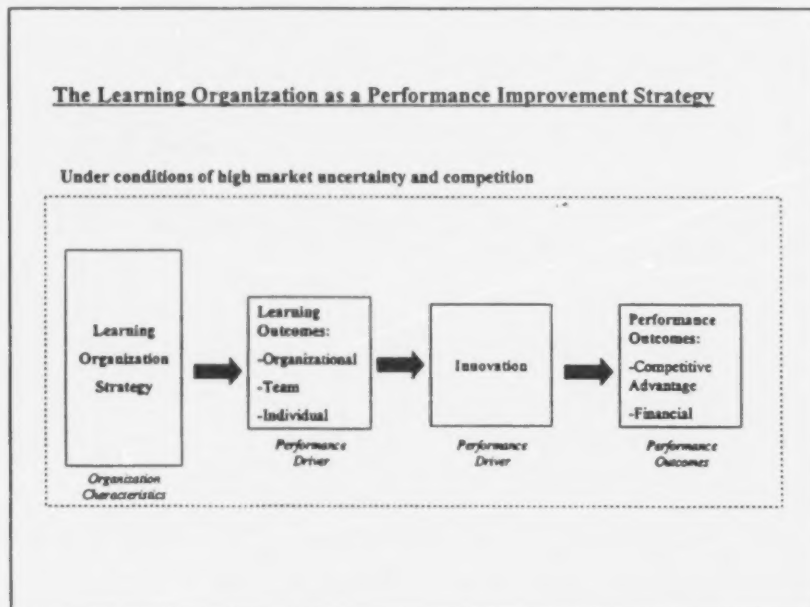
The learning organization and the innovating organization are both dependent on the acquisition of information, the interpretation of information, the creation of meaning, and the creation of organizational knowledge. The stated end goal of both the learning system and the innovating system is improved organizational performance. The similarities between the two literatures are striking (see Table 1): the linking pin in both is knowledge; the goal in both is performance improvement.

A comparison of both literatures suggests that the organizational strategies engaged to support the learning and innovating endeavors are similar and suggest parallel strategies. Innovation appears to be affected by culture, climate, leadership, management practices, dynamics of information processing, organizational structure, organizational systems, and the environment. Table 1 summarizes the organizational strategies, structures, and practices which are found in both the learning organization literature and the innovation literature.

The existence of these parallel sets of variables suggests that a relationship may exist between the learning organization and innovation. The relationship may be that the learning organization enables the conversion of information to a knowledge level, thereby enhancing innovation which promotes organizational performance improvement. If this relationship is true, then a large base of innovation research has been overlooked that would help provide additional clarity and precision to understanding how the learning organization improves performance.

Based on the review of the learning organization and innovation literatures, and on the parallel sets of variables and theorized relationships to performance improvement, the following model (see Figure 1) is proposed. This model hypothesizes that learning organization strategies increase learning and innovation (performance drivers) which improve performance outcomes.

Figure 1



### Research Propositions

This hypothesized model of the learning organization as a performance improvement strategy results in the following research propositions.

*Proposition 1: Adoption and implementation by an organization of the characteristics described in the learning organization literature will result in improved learning at the individual, team, and organizational levels.*

The outcome goal of learning at all levels is well articulated in the literature (Marquardt, 1996; Senge, 1990; Watkins & Marsick, 1993). Strategies for achieving this stated goal have been proposed which include changes in organizational and team cultures, leadership and management practices, structure and systems, communication practices, and in organizational values, goals, and vision (Guns, 1996; Marquardt, 1996; Pedler et al., 1991; Senge, 1994).

*Proposition 2: Learning, in particular improved learning at the team and organizational levels, leads to increased organization innovation.*

While innovation is sometimes thought to be the creation of a single individual, it is more often the result of collective efforts. Organizations are thought to acquire knowledge and capabilities which cannot be found in any individual member (Garud, et al., 1997). It is this collective aspect of learning and the greater knowledge created through the communal process that is the goal of communities-of-practice (Brown & Duguid, 1991).

*Proposition 3: The adoption of learning organization strategies is appropriate for organizations in markets where innovation is a key performance driver.*

The performance link to organizational learning has been recognized by other theorists as well. Strata (1989) described learning as a fundamental concept which is related to organizational change and improvement. Dodgson (1993) reports that the need for organizations to learn is often related to change. And, the expressed requirements during these periods are both adaptation and efficiency. He goes on to state that learning is regarded as necessary in order for organizations to improve their competitiveness, productivity, and innovativeness. Strata (1989) believes that learning is the principal process in management innovation.

The key problem for organizations is recognizing when the environment is appropriate for a learning strategy. As Bartlett and Ghoshal (1997) point out, organizations in rapidly changing markets find traditional strategic planning approaches inadequate because they can not forecast the future accurately. Instead, they have to focus on being more responsive to change, and therefore increase learning and innovation. It would be inappropriate to argue that all organizations should adopt a learning strategy, or the same degree and scope of learning strategy. The learning strategy, if adopted, must match the environmental conditions, only some of which are expected to lead to improved performance.

*Proposition 4: Under appropriate environmental conditions, innovation sustains or increases system, sub-system, process, or individual ability and capacity to be more effective or efficient in the future.*

In support of these views, Slater and Narver (1995) suggest that "behavior change is the link between organizational learning and its ultimate objective, performance improvement" (p.66). Innovation is believed to lead to improved goal attainment and organizational performance (Damanpour, 1991; Damanpour & Evan, 1984).

*Proposition 5: Innovation is expected to result in improved performance outcomes, leading to competitive advantage for the organization.*

Innovation is defined by Damanpour (1991) includes devices, systems, policies, programs, processes, products, and services new to the organization. The successful internal adoption of these as performance drivers acts an indicator of goals related to future performance outcomes (Holton, in press). Organizational competitive advantage is believed to have four generic sources (Obloj et al., 1995). These are described as: favorable cost advantage, product and service differentiation, product line scope either through broader range of products and services, or through product focus achieving quality status, and time to market.

*Proposition 6: The competitive advantage resulting from innovation-induced performance outcomes will result in improved organizational financial outcome measures.*

Among the financially beneficial outcomes related to competitive advantage are: market share, customer loyalty, high status of product brand, and high profits (Obloj et al., 1995). Dornblaser, Lin and Van de Ven (1989) list the outcome criteria used by innovation managers as market success, ROI, contribution to organizational goals, and impact on organizational survival and growth.

The economic theory of innovations suggests that the effect of innovation is the same as explained by the classic economic model: it either lowers the cost curve or increases the output curve (Rosegger, 1996). However, intensive studies of innovations show that traditional profit maximizing strategies from the classic economic model are not effective in light of the extreme uncertainty inherent in innovation (Freeman & Soete, 1997). Factors identified by economists for economically successful innovations include many identified by the learning organization: strong internal communication, inter-functional coordination, open-minded management, responsiveness to change, acceptance of risk, entrepreneurial culture, customer orientation, commitment to developing human capital (Freeman & Soete, 1997, p. 223).

*Proposition 7: In markets where innovation is necessary for survival, four states of potential organizational viability exist. These are:*

- 7a. A state defined by low learning/innovation - low organizational effectiveness results in stagnancy, marked by reliance on current products and processes, and no increase in market share and related financial markers.*
- 7b. A state defined by high learning/innovation - low organizational effectiveness results in short term viability, marked by new products, new processes but no increase in market share nor related financial markers.*
- 7c. A state defined by low learning/innovation - high organizational effectiveness results in short term viability, marked by a threatened state for the organization due to the pace of change of innovative competitors.*
- 7d. A state defined by high learning/innovation - high organizational effectiveness results in continued organizational viability, marked by continued learning, innovation, and improved performance, and supported by the organization's competitive position.*

## Conclusion

These propositions are entirely untested and should not be interpreted as statements of fact. Nonetheless, there is compelling evidence that if the learning organization does in fact improve organizational performance, innovation may be the missing link. It is important that learning organization theory and research be extended to more specifically explicate the mechanisms by which organizational learning improves performance. This paper provides an initial set of testable

propositions in the hopes that a more precise specification of the learning organization as a performance improvement strategy will result.

## References

- Amabile, T. (1988). A model of creativity and innovation in organizations. Research in Organizational Behavior, 10, 123-167.
- Argyris, C. (1977). Double-loop learning in organizations. Harvard Business Review, 55, 115-125.
- Argyris, C. & Schon, D. (1978). Organizational Learning: A Theory of Action Perspective. Reading, MA: Addison-Wesley.
- Ashkenas, R., Ulrich, D., Jick, T. & Kerri, S. (1995). The Boundaryless Organization: Breaking The Chains of Organizational Structure. San Francisco: Jossey-Bass.
- Bartlett, C. A. & Ghoshal, S. (1997). Beyond strategic planning to organization learning: Lifeblood of the individualized corporation. Strategy and Leadership, 26, 34-39.
- Brown, J. & Duguid, P. (1991). Organizational learning and communities-of-practice: toward a unified view of working, learning, and innovation. Organization Science, 2(1), 40-57.
- Daft, R. & Huber, G. (1987). How organizations learn: a communication framework. Research in the Sociology of Organizations, 5, 1-36.
- Daft, R. & Becker, S. (1978). The Innovative Organization. NY: Elsevier.
- Damanpour, F. (1991). Organizational innovation: a meta-analysis of effects and determinants and moderators. Academy of Management Journal, 34(3), 555-590.
- Damanpour, F. & Evan, W. (1984). Organizational innovation and performance: the problem of organizational lag. Administrative Science Quarterly, 29, 392-409.
- Dodgson, M. (1993). Organizational learning; a review of some literatures. Organization Studies, 14(3), 375-394.
- Dornblaster, B., Lin, T. and Van de Ven, A. (1989). Innovation outcomes, learning, and action loops. In Van de Ven, Angle, and Poole (Eds.), Research on the Management of Innovation. NY: Harper & Row.
- Ettlie, J. & O'Keefe, R. (1982). Innovative attitudes, values, and intentions in organizations. Journal of Management Studies, 19(2), 163-182.
- Fidler, L. & Johnson J.D. (1984). Communication and innovation implementation. Academy of Management Review, 9(4), 704-711.
- Freeman, C. & Soete, L. (1997). The economics of industrial innovation-3<sup>rd</sup> edition. Cambridge, MA: MIT Press.
- Galbraith, J. (1982). Designing the innovating organization. Organizational Dynamics, 10(3), 5-25.
- Garud, R., Nayyar, P. and Shapira, P. (1997). Technological Innovation: Oversights and Foresights. NY: Cambridge University Press.
- Garvin, D. (1993). Building a learning organization. Harvard Business Review, 71, 78-91.
- Glynn, M. (1996). innovative genius: a framework for relating individual and organizational intelligences to innovation. Academy of Management Review, 21(4), 1081-1111.
- Guns, B. (1996). The Learning Organization: Gain and Sustain the Competitive Edge. San Diego: Pfeiffer.
- Holton, Elwood F. III (in press) What is performance? Bounding the Domain. In R. Torrance (Ed.) Defining the agenda for performance improvement research. Washington, DC: International Society for Performance Improvement.
- Jacobs, R. (1995). Impressions about the learning organization: looking to see what is behind the curtain. Human Resource Development Quarterly, 6 (2), 119-122.
- Kaplan, R. S. & Norton, D. P. (1996). The balanced scorecard. Boston: Harvard Business School Press.
- Kline, P. & Saunders, B. (1993). Ten Steps To A Learning Organization. Arlington, VA: Great Ocean Publishers.

- Kuchinke, K. P. (1995). Managing learning for performance. Human Resource Development Quarterly, 6(3), 307-316.
- Leonard-Barton, D. (1988). Implementation characteristics of organizational innovations. Communication Research, 15(5), 603-631.
- Marquardt, M. (1996) Building The Learning Organization. NY: McGraw-Hill.
- Marquardt, M. (1995). Building a global learning organization. Industry & Higher Education, August, 217-226.
- Meyer, A. (1982). Adapting to environmental jolts. Administrative Science Quarterly, 27, 515-537.
- Meyer, A. & Goes, J. (1988). Organizational assimilation of innovations: a multilevel contextual analysis. Academy of Management Journal, 31(4), 897-923.
- Nonaka, I. & Takeuchi, H. (1995). The Knowledge-Creating Company. NY: Oxford University Press.
- Obloj, K., Cushman, D. and Kozminski, A. (1995). Winning: continuous Improvement Theory in High-Performance Organizations. Albany, NY: State University of New York Press.
- Pedler, M., Bourgoyne, J. & Boydell, T. (1991). The Learning Company: A Strategy for Sustainable Development. London: McGraw-Hill (Europe).
- Rogers, E. (1983). Diffusion of innovations. NY: Free Press.
- Rosegger, G. (1996). The economics of production and innovation: An industrial perspective-3<sup>rd</sup> edition. Oxford: Butterworth-Heinemann Press.
- Senge, P. (1994). The Fifth Discipline Fieldbook. NY: Doubleday.
- Senge, P. (1992). Building the Learning Organization. Journal for Quality and Participation, March, 30-38.
- Senge, P. (1990). The Fifth Discipline: The Art And Practice Of The Learning Organization. New York: Doubleday.
- Slater, S. & Narver, J. (1995). Market orientation and the learning organization. Journal of Marketing, 59 (July), 63-74.
- Strata, R. (1989). Organizational learning- the key to management innovation. Sloan Management Review, Spring, 63-74.
- Tjosvold, D. & McNeely, L. (1988). Innovation through communication in an educational bureaucracy. Communications Research, 15(5), 568-581.
- Van de Ven, A & Rogers, E. (1988). Innovations and organizations: critical perspectives. Communication Research, 15(5), 632-651.
- Van de Ven, A. (1986). Central problems in the management of innovation. Management Science, 32, 590-607.
- Watkins, K. & Marsick, V. (1993). Sculpting The Learning Organization: Lessons in the Art and Science of Systemic Change. San Francisco: Jossey-Bass.

## Examining Construct Validity of Dimensions of the Learning Organization Questionnaire

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*The article reports a study examining the construct validity of a newly developed instrument measuring dimensions of the learning organization. Supporting validity evidence for the instrument was obtained from several sources including: best model-data fit among alternative measurement models, nomological network among dimensions of the learning organization and organizational performance outcomes. Moderate to high reliability estimates were obtained for the seven proposed dimensions of the construct. Consequently, the instrument, Dimensions of the Learning Organization Questionnaire (DLOQ), was recommended for use in organizational studies.*

The concept of learning organization has received an increasing attention in the field of human resource development, yet little is known about how to measure it. From a theoretical perspective and for research purposes, researchers need to know the dimensionality of this concept and its relationships with other organizational variables. Watkins and Marsick (1993, 1996) identified seven dimensions of learning organization: create continuous learning opportunities (referred as *Continuous Learning*), promote dialogue and inquiry (*Dialogue and Inquiry*), promote collaboration and team learning (*Team Learning*), empower people toward a collective vision (*Empowerment*), establish systems to capture and share learning (*Embedded System*), connect the organization to its environment (*System Connection*), and provide strategic leadership for learning (*Provide Leadership*). Based on their proposed theoretical framework, an instrument entitled Dimensions of the Learning Organization (DLOQ) was developed to assess learning activities in the organization. Content validity and reliability evidences have been shown in previous studies (Watkins, Yang, Marsick, 1997).

This study was designed to investigate the construct validity of the DLOQ by examining the number of dimensions thought to explain the inter-relations among items included in the instrument, and by examining the relationship between learning behavior measured on the scale and organizational outcome variables.

Two questions were addressed to assess the construct validity of the DLOQ:

- (1) To what extent do the proposed dimensions of the learning organization explain the covariation of learning behaviors in the responses to the items in the instrument?
- (2) What is the relationship between learning behavior and organizational outcome variables as defined by financial and knowledge performance?

### Methods

Copies of DLOQ version 3 were distributed to a non-random sample of respondents from multiple organizations. A total of 469 valid responses were collected between the spring of 1997 and summer of 1997 and served as the sample for the present study. A little more than half (55%) of the respondents worked in service sector, 40% of them worked in manufacturing, and only 5% of them worked in government or other public organizations. About one-third (34%) of the responses have reported to have annual revenue between \$2-25 million, while 30% of them reported annual revenue between \$25-99 million. The majority (46%) of the respondents reported that they spent 1 to 10 hours of their own time on work-related learning per month.

Several techniques were utilized to determine a final form of the instrument with adequate psychometric properties and with demonstrable construct validity. Construct validity refers to the

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extent to which a scale developer can assure exactly what the instrument is measuring (AERA/APA/NCME, 1985; Crocker & Algina, 1986). In this study, confirmatory factor analysis (CFA) was selected to assess the construct validity for the measure of dimensions of the learning organization. This factor analysis technique was the appropriate method as it examines if the proposed dimensions of the learning organization had some attributes that could provide organized interpretations of learning behaviors. It can be used to verify the adequacy of the item to factor associations and the number of dimensions underlying the construct (Bollen, 1989; Thompson & Daniel, 1996). Structural equation modeling (SEM) was used to assess the relations between dimensions of the learning organization, key demographic variables, and organizational performance measures. All analyses were performed with LISREL 8 based on the covariance matrices generated by PRELIS 2 (Jöreskog & Sörbom, 1993a, 1993b).

**Testing Alternative Measurement Models** The construct validity for the measures of the DLOQ were first examined by testing alternative measurement models, following Jöreskog's (1993) method of alternative models (AM). Three competing measurement models were formulated and tested. The first model was a null model where no common latent variable was assumed to exist among the observed variables represented by the instrument items. This is also called the baseline model because it is the simplest and most restrictive model which can be used to compare other less restrictive models. This model assumes that there is no common concept for us to investigate among various learning activities in the organization. The second model assumed one factor underlies the observed variables and that the covariations among the observed variables could be adequately explained by a single construct of the learning organization. In other words, this model assumed that the learning organization is an unidimensional concept. The third model consisted of seven latent variables representing seven proposed dimensions of the construct. The third model was of interest as we want to see if the proposed constructs explain the covariances among observed variables reasonably well and to see if this model showed a significantly improvement in the model-data fit over the null model and one-factor model.

**Examining the Instrument Reliability** There are a number of measurement models that have been proposed to estimate the reliability of a scale (Lord & Novick, 1968). One of the most common reliability estimates is Cronbach's coefficient alpha [Cronbach's  $\alpha$  (1951)]. However, it has been suggested that Cronbach's coefficient alpha ( $\alpha$ ) represents the lower bound of the reliability coefficient, as it assumes that all individual items measure the true score of the latent variable equally well (Bollen, 1989; Crocker & Algina, 1986). The coefficient  $\alpha$  represents a classic model of reliability estimation where an individual's true score is viewed as the average of an infinite number of responded scores of the same test. Therefore, a more realistic measurement model was required to estimate the reliability of the instrument.

Cronbach's  $\alpha$  (1951) assumes a tau-equivalent model. The tau-equivalent model assumes that each item is an equally accurate indicator of the same true score, and that the separate item errors are uncorrelated and have different variance. However, the tau-equivalent model is quite restrictive and tends to be biased in estimating reliability because items in a scale do not all perform equally well in measuring the same true score. The tau-equivalent model cannot be used to estimate reliability for individual items when the equality of the items' association to the true score is not maintained (Bollen, 1989; Fleishman & Benson, 1987; Lord & Novick, 1968).

The congeneric model (Jöreskog, 1969) is less restrictive and assumes only that each item reflects the same true score, but to different degrees, and that item errors may differ or even be correlated. The congeneric model was deemed to be appropriate in estimating the reliability of the instrument for the current study. To assess the reliability with congeneric model, a confirmatory factor analysis needs to be performed and the reliability estimates can be obtained by calculating the proportion of item variance that can be accounted by the latent variable (Fleishman & Benson, 1987).

**Assessing Nomological Validity** Organizations use a variety of ways to learn, and their behaviors could be reported from as many perspectives as there are observers. These different learning dimensions collectively define the concept of the learning organization. The learning organization is a construct that researchers postulate to reflect interpretable learning behaviors in organizations. The empirical evidence of interrelations among constructs provides a means for establishing and validating theoretical frameworks in social science research. Social science is an enterprise of discovering laws underlying social phenomena, and is engaged in a back and forth

process (empirical evidence vs. theorizing). The theoretical relations among the concepts of interest, or interlocking system of lawful relations, is referred to as a nomological network by Cronbach and Meehl (1955). The concept of nomological validity is a major contribution in psychometric literature, and it is a useful design in the practice of scale validation (Benson & Hagrvet, 1996).

Cronbach and Meehl (1955) maintained that "[a] rigorous (though perhaps probabilistic) chain of inference is required to establish a test [or a scale] as a measure of a construct. To validate a claim that a test measures a construct, a nomological net surrounding the concept must exist" (p. 291). In other words, "[a] necessary condition for a construct to be scientifically admissible is that it occur[s] on a nomological net, at least *some* [italic original] of whose laws involve observables" (p. 290). For the current study the nomological networks between dimensions of the learning organization and organizational outcome variables was examined. Two variables, financial performance and knowledge performance, were constructed in the DLOQ to establish a nomological net between learning behaviors and outcomes. According to Watkins and Marsick (1993, 1996), there are three levels of organizational learning. The first is individual level which is composed by two dimensions of organizational learning: *Continuous Learning* and *Dialogue and Inquiry*. The second is team or group level which is reflected by *Team Learning and Collaboration*. The third is the organizational level that has four dimensions of organizational learning: *Embedded System*, *System Connection*, *Empowerment* and *Provide Leadership*. It was reasoned that the organization needs to work with people at the individual and group level first. People also need to be empowered to take learning initiatives. It was also reasoned that the organizational level learning activity could serve as a refine function by filtering and incorporating individual and group learning into the organization's mission or ultimate performance outcome. Particularly, we theorized that three variables, *System Connection*, *Embedded System* and *Provide Leadership*, are the mediators between individual level learning activities and organizational outcomes. In Figure 1, a proposed model captures the hypotheses about the relationships among dimensions of the learning organization and outcome variables.

Following Benson and Hagrvet (1996), the method of structural equation modeling (SEM) was used to examine the relationships postulated in Figure 1. If the proposed model fits the data and the hypothesized relations among the constructs are found to be significant in the desirable directions, there are significant relations between the proposed seven dimensions of the learning organization and the two organizational outcome variables. It then can be concluded that learning behaviors measured on the instrument are significantly related to organizational outcomes, in a way implied by the theory. Therefore, evidence of nomological validity was provided for the instrument.

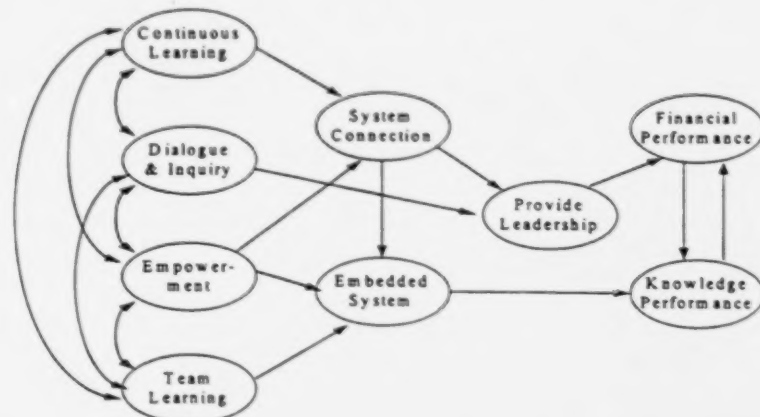


Figure 1. Proposed model illustrating the role of organizational learning systems and leadership as mediators of the relationships between individual learning and organizational outcomes.

**Evaluating Model-Data Fit** In confirmatory factor analysis and structural equation modeling, a decision to accept or reject a model is typically made using an overall chi-square goodness-of-fit measure. A model is acceptable only if residuals between elements of the sample covariance matrix and the covariance matrix reproduced according to the model converge in probability to zero as the sample size goes to infinity. Nevertheless, the chi-square test is limited in testing various models because of its sensitivity to sample size. As sample size increases, even trivial residuals might increase the likelihood of falsely rejecting the model. Moreover, the chi-square test is established to determine a restrictive hypothesis that the model being tested is the true model with regard to a sample. In other words, the chi-square test demands a perfectly reproduced covariance matrix based on the theoretical model. As a matter of fact, most social/behavioral models are merely approximations of "reality" or "truth." Consequently, the chi-square significance test is limited in model testing practice and a variety of alternative statistics are proposed to determine the adequacy of the measurement and structural equation models (Bollen, 1989). Therefore, most researchers rely on a variety of alternative fit indices to reduce the dependence on sample size when assessing model fit. Because the various indices differ on their specific assumptions, researchers advocate that the models be judged using multiple fit indices that represent different families of measures of fit and one must take into account the degree of substantive meaning for a model (Bollen & Long, 1993).

This study selected six criterion indices including chi-square ( $\chi^2$ ) test, Jöreskog and Sörbom's (1989) goodness of fit index (GFI) and goodness of fit index adjusted for degree of freedom (AGFI), Bentler's (1990) comparative fit index (CFI), Bentler and Bonett's (1980) non-normed fit index (NNFI), and Steiger's (1990) root mean square error of approximation (RMSEA). The GFI and AGFI reflect the proportion of joint amount of data variance and covariance that can be explained by the measurement model being tested. The NNFI is a relative fit index which compares the model being tested to a baseline model (null model), taking into account the degrees of freedom. The CFI indicates the degree of fit between the hypothesized and null measurement models. The RMSEA represents a real advance in the evaluation of model fit from both statistical and conceptual viewpoints. Browne and Cudeck (1993) argue that because theoretical models are at best approximations of reality, the null hypothesis for any measurement/structural equation model (i.e., conventional chi-square test that the data fits the model perfectly) will rarely be true. Rather than testing the null hypothesis of *exact fit* between the covariance matrix of sample and that of model for population, RMSEA establishes a hypothesis of *close fit* between the model and population. RMSEA values of .05 or less indicate a very close fit between sample and theoretical model, accounting for degrees of freedom. Values less than .08 reflect reasonably good fitting models (Browne & Cudeck, 1993).

## Results

**Alternative Measurement Models** Table 1 presents the fit indices of the three alternative measurement models in simple factor structure and a complex structure. A simple factor structure assumes that each item is designed to solely measure one factor and measurement errors are not allowed to be correlated. A complex factor structure is a more realistic model where items are permitted to load on second factor and measurement errors can be correlated. The modification index for the LISREL was examined to identify whether adding parameter to the hypothesized model was warranted. Specifically, 14 additional links were added to the simple structure model (eight of them were secondary loadings and six were correlated measurement errors). In evaluating measurement models, we did not rely on chi-square tests to assess overall fit because their sensitivity to sample size and other biases. Based on the selected fit indices, the proposed seven-factor model fit the data best among the alternative models examined. The seven-factor simple structure model accounted for nearly three-fourths of item variances and covariances (GFI = .741) and the modified model accounted more than 80% of the variance. Also, the values of the RMSEAs (all were less than .08) indicated that the proposed seven-factor structure formed appropriate measurement models (Browne & Cudeck, 1993).

**Table 1. Fit Indices for Alternative Measurement Models in the Simple and Complex Factor Structures of DLOQ**

| Fit Index   | Simple Factor Structure |          |          | Complex Structure |
|-------------|-------------------------|----------|----------|-------------------|
|             | Null Model              | 1-Factor | 7-Factor | 7-Factor          |
| $\chi^2$    | 11929.623               | 3973.612 | 2970.916 | 2353.365          |
| df          | 861                     | 819      | 798      | 784               |
| $\chi^2/df$ | 13.856                  | 4.852    | 3.723    | 3.002             |
| RMSEA       | .166                    | .091     | .076     | .065              |
| RMSR        | .375                    | .068     | .061     | .052              |
| GFI         | .142                    | .661     | .741     | .802              |
| AGFI        | .098                    | .626     | .707     | .772              |
| NNFI (TLI)  | 0                       | .700     | .788     | .844              |
| CFI         | 0                       | .715     | .804     | .858              |

*Note.* RMSEA = root mean square error of approximation; RMSR = root mean square residual; GFI = goodness-fit-index; AGI = adjusted GFI; NNFI = non-normed fit index; CFI = comparative fit index.

Fit indices for the measurement model designed to assess organizational outcomes are presented in Table 2. The results indicated that the proposed two-factor model fit the data best among alternative measurement models being tested. Although this model failed to reproduce variance and covariance matrix close to the matrix from data (as indicated by moderate magnitude of the average residuals), the modified model formed an appropriate measurement model. The goodness-of-fit index reached .94, indicating that more than 90% of item variances and covariances could be explained by the proposed two-dimension factor structure. The average standardized residuals of the predicted covariance matrix from the observed one (as measured by RMSR) decreased from .081 to .048. The refined structure formed a measurement model with acceptable comparative fit indices (GFI = .944, NNFI = .891, and CFI = .924). The value of RMSEA (.079) suggested that the included 12 items had represented a very reasonable measurement model for the constructs of *Financial Performance* and *Knowledge Performance*, following Browne and Cudeck's (1993) criteria for model fit.

**Table 2. Fit Indices for Alternative Measurement Models in the Simple and Complex Factor Structures of Organizational Outcomes**

| Fit Index   | Simple Factor Structure |          |          | Complex Structure |
|-------------|-------------------------|----------|----------|-------------------|
|             | Null Model              | 1-Factor | 2-Factor | 2-Factor          |
| $\chi^2$    | 1826.900                | 516.393  | 438.4    | 179.800           |
| df          | 66                      | 54       | 53       | 46                |
| $\chi^2/df$ | 27.680                  | 9.563    | 8.272    | 3.909             |
| RMSEA       | .239                    | .135     | .125     | .079              |
| RMSR        | .306                    | .084     | .081     | .048              |
| GFI         | .451                    | .839     | .874     | .944              |
| AGFI        | .351                    | .767     | .814     | .905              |
| NNFI (TLI)  | 0                       | .679     | .727     | .891              |
| CFI         | 0                       | .737     | .781     | .924              |

Overall, the results indicated that the proposed seven dimensions of the learning organization adequately explained the covariation of learning behaviors measured in the DLOQ, and that two-factor model of organizational outcome formed a reasonable measurement model in terms of mode-data fit. Therefore, items included in the DLOQ are thought to be adequate measures for the domains of learning organization dimensions and organizational performance outcomes.

**Reliability Estimates** Table 3 reports the reliability estimates for the dimensions of the learning organization measured in the DLOQ. The reliability was estimated by tau-equivalent model (commonly known as coefficient alpha) and congeneric model (Jöreskog & Sörbom, 1989).

The later one was included because it is a more accurate estimation in CFA contexts. The coefficient alpha for seven proposed dimensions ranged from .752 to .847 and the reliability estimates under CFA ranged from .787 to .870. The reliability estimates for two outcome variables were .709, .739 and .768, .779 under the tau-equivalent model and congeneric model respectively. Overall, the DLOQ showed acceptable reliability estimates for the seven proposed dimensions of the learning organization.

Table 3. Reliability Estimates for the Measures in the DLOQ

| Subscale                      | Number of Items | Coefficient Alpha | Reliability Under CFA |
|-------------------------------|-----------------|-------------------|-----------------------|
| <i>Continuous Learning</i>    | 6               | .789              | .811                  |
| <i>Dialogue &amp; Inquiry</i> | 6               | .848              | .870                  |
| <i>Team Learning</i>          | 6               | .835              | .855                  |
| <i>Embedded System</i>        | 6               | .798              | .818                  |
| <i>System Connection</i>      | 6               | .818              | .840                  |
| <i>Empowerment</i>            | 6               | .752              | .787                  |
| <i>Provide Leadership</i>     | 6               | .856              | .877                  |
| <i>Financial Performance</i>  | 6               | .709              | .768                  |
| <i>Knowledge Performance</i>  | 6               | .739              | .779                  |

**Nomological Validity** In order to establish the nomological validity for the instrument, structural equation modeling (SEM) method was used to examining the relationships between the seven dimensions the learning organization and the two outcome measures (*Financial Performance* and *Knowledge Performance*). The results of SEM suggested that the proposed nomological network illustrated in Figure 1 has a close fit to the data. Although the overall chi-square test of the model was statistically significant ( $\chi^2(1357) = 4442.147$ ,  $p < .01$ ), more significantly, the value of RMSEA (.069) indicated that the model-data fit is appropriate (Browne and Cudeck, 1993). The model also showed reasonable values on other comparative fit indices (GFI = .695, NNFI = .759, CFI = .772). In other words, about 70% of the joint amount of variance and covariance of the data could be accounted for by the model being tested.

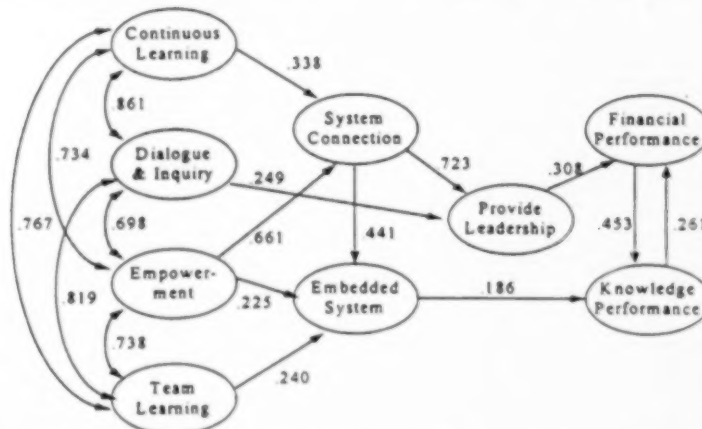


Figure 2. LISREL estimates of structural model coefficients for a proposed nomological model.

Figure 2 shows estimates of the structural coefficients for the nomological network. Each of these coefficients can be viewed as a standardized regression coefficient of one exogenous variable on its related endogenous variable when the effects of other variables were partialled out. All of the path coefficients were statistically significant and positive in direction. The results indicated that individual and group level learning activities, namely *Continuous Learning*,

*Dialogue and Inquiry*, *Team Learning*, and *Empowerment*, had indirect significant effects on organizational outcomes. Three organizational level variables, *System Connection*, *Embedded System*, and *Provide Leadership*, served as mediators of the relations between the individual learning activities and organizational outcomes. However, these variable influence the organizational outcomes in different ways. While *Provide Leadership* was the only variable that had direct influence on *Financial Performance*, *Embedded System* affected the *Financial Performance* indirectly through *Knowledge Performance*. Also, *System Connection* was indirectly related to the organizational outcomes. The results suggested that while learning systems are important in absorbing individual learning activities, they had indirect impacts on the outcomes. *System Connection* appeared to be more important than *Embedded System* in determining organizational outcomes. The estimates of the path coefficients indicated that *System Connection* had strong relation with *Provide Leadership* (.723), which was moderately related to *Financial Performance* (.308). On the other hand, *Embedded System* had a little influence on *Knowledge Performance* (.186), which, in turn, showed also mild impact on *Financial Performance* (.261). Connecting organization to its environment may be much more important than creating systems to capture and share learning in an ever changing world. Perhaps as some organizational change scholars have noted, we no longer can afford the luxury of refreezing organizations but must instead move on to the next stage.

The organizational level variables have not only different impacts on organizational outcomes, but also have been influenced by individual learning in distinct ways. The efforts of connecting the organization to its environment (namely, *System Connection*) largely depend on continuous learning opportunities and empowered people with a collective vision. Moreover, creating systems to capture and share learning (in other words, *Embedded System*) needs at least two prerequisite conditions: people are empowered toward a collective vision and they are encouraged to participate in enacting that vision through collaboration and team learning. The more efforts were devoted to promote inquiry and dialogue among people within the organization (reflected as *Dialogue and Inquiry* in the scale), the more the leadership was provide to steer the organization in the right direction. This confirms Mintzberg's (1973) seminal research on managerial roles which suggests that leaders influence roles lead to the ability to perform informational roles which make possible better enactment of decisional roles. The estimates of the path coefficients from individual level variables to organizational level variables are in almost homogeneous magnitude (most in .20s and .30s except one path from *Empowerment* from *System Connection*). Therefore, these variables held similar importance to the organizational level learning. However, the estimate of the path from *Empowerment* to *System Connection* is about tripled that to *Embedded System* (.661 vs. .225). In other words, *Empowerment* are much more important for *System Connection* than that for *Embedded System*. Again, it is reasonable to expect that individuals are better able to scan their environment and build meaningful personal networks or systems for knowledge acquisition when empowered to move freely while the organization must create the technological and procedurally based systems which capture and manage knowledge.

The SEM results indicated that the squared multiple correlation for the endogenous variable *Financial Performance* was .413 and .630 for *Knowledge Performance*. Put in other words, when operationalized as constructs, 41% and 63% of the variance of the two organizational outcomes variables were explained by the proposed structural equation model. It was not a surprise to find that more variance of the *Knowledge Performance* had been explained by the model than *Financial Performance* because the instrument was designed to measure learning aspects of the organization. Nevertheless, it was very encouraging to find that more than 40% of the *Financial Performance* could be attributed to the variables measured in the instrument. Certainly, there are other important variables which better explain financial outcomes [e.g., organizational size, access to raw materials, market niche, competition, etc.] than those included in the present study. Overall, the results of SEM showed that measures of seven dimensions of the learning organization had significant impacts on organizational outcomes. A considerable amount of the variation of the organizational outcomes could be explained by the proposed nomological network. As all of the dimension of the learning organization are significantly related to others in the hypothesized ways, the nomological validity of the instrument is evident.

## Discussion and Implications

The present study showed strong evidence of construct validity for the scale measuring dimensions of the learning organization. The study tested a factor structure of the dimensions of the learning organization, and confirmed that the learning organization is a multidimensional construct. The seven-factor structure of the learning organization proposed by Watkins and Marsick (1993, 1996) fits the data reasonably well. This structure will provide a useful framework for other researchers to study learning dimensions and their relations with other organizational performance variables. The DLOQ will provide a useful tool for researchers to assess dimensions of the learning organization.

Constructing a valid instrument is an on-going process. Further studies are needed for the scale with large sample size and different types of the organizations, particularly government or non-profit organizations. More studies are also needed to cross-validate the instrument with different populations of the organization, in order to firmly establish its utility and validity. Presently, the majority of respondents are senior or middle level managers or professional/technical employees. Studies with a broad cross-section of employees within the same organization are needed as well as studies across a large number of different organizations. Finally, an important use of an instrument such as DLOQ is to measure change across time as a way of determining whether and how active intervention to create a learning organization affects responses. Is there a typical pattern of responses among newcomers to the learning organization? Does a different pattern of response emerge over time?

This study revealed a pattern of learning behavior in the organization. People who work in organizations can derive a variety of learning patterns by examples from their own activities. The study shows that there is an underlying structure that represents patterns of learning activities in the organization. This parsimonious pattern of learning and its relationship to organizational outcomes offer valuable and practical strategies for HRD practitioners who would work to create learning organizations.

## References

- Bollen, K. A. (1989). Structural equations with latent variables. New York: John Wiley & Sons.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. Bollen & J. Long (Eds.), Testing structural equation models (pp. 136-162). Newbury Park, CA: Sage.
- Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. Psychological Bulletin, 52, 281-302.
- Fleishman, J., & Benson, J. (1987). Using LISREL to evaluate measurement models and scale reliability. Educational and Psychological Measurement, 47, 925-939.
- Jöreskog, K. G. (1969). A general approach to confirmatory maximum likelihood factor analysis. Psychometrika, 34, 183-202.
- Jöreskog, K. G. (1993). Testing structural equation models. In K. A. Bollen & J. S. Long (Eds.), Testing structural equation models (pp. 294-316). Newbury Park, CA: Sage.
- Jöreskog, K. G., & Sörbom, D. (1993a). LISREL 8: User's reference guide. Chicago: Scientific Software.
- Jöreskog, K. G., & Sörbom, D. (1993b). PRELIS 2: User's reference guide. Chicago: Scientific Software.
- Mintzberg, H. (1973). The nature of managerial work. New York: Harper & Row.
- Thompson, B., & Daniel, L. G. (1996). Factor analytic evidence for the construct validity of scores: A historical overview and some guidelines. Educational and Psychological Measurement, 56, 197-208.
- Watkins, K. E., Marsick, V. J. (1993). Sculpting the learning organization: Lessons in the art and science of systemic change. San Francisco: Jossey-Bass.
- Watkins, K. E., Marsick, V. J. (1996). In action: Creating the learning organization. Alexandria: American Society for Training and Development.
- Watkins, K. E., Yang, B. & Marsick, V. J. (1997). Measuring dimensions of the learning organization. In R. Torraco (Ed.), Proceedings of 1997 Annual Academy of Human Resource Development Conference (pp. 543-546). Atlanta: GA.